

## APPARATUS FOR REDUCING FLICKER NOISE IN A MIXER CIRCUIT

### ABSTRACT OF THE DISCLOSURE

A differential mixer includes DC currents that reduce flicker noise in the mixer circuit without increasing local oscillator drive requirements. The differential mixer circuit includes an RF transconductance circuit and a local oscillator (LO) switching circuit. The RF transconductance circuit converts a differential RF input signal to a differential RF current. The LO switching circuit commutates the differential RF input signal according to a local oscillator signal to frequency translate the RF input signal. The DC currents or bleeder currents are added directly to the field effect transistors in the RF transconductance circuit, which reduces the flicker noise produced by the mixer. The DC currents do not pass through the FETs in the LO switching circuit so there is no increase in the LO drive requirements.

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